

LISTING OF CLAIMS

Claim 1 (Currently Amended)

A high-pressure processing apparatus for subjecting a surface of a process subject to a predetermined surface treatment by allowing a process fluid comprising a high-pressure fluid or a mixture of the high-pressure fluid and at least one chemical agent to contact the surface of said process subject, said apparatus comprising:

a pressure vessel including a processing chamber defined therein for performing said surface treatment;

a mixing section supplying a process fluid under pressure to said pressure vessel;

a high-pressure fluid supply section means for supplying said high-pressure pumping a first fluid under pressure to said processing chamber mixing section; and

a chemical-agent supply means section preparing which prepares a chemical formulation by blending together all or selected one(s) at least one of plural chemical agents and then, as required, pumps pumping the chemical formulation under pressure into said mixing section,

wherein the high-pressure first fluid pumped from said high-pressure fluid supply means section and the chemical formulation pumped from the chemical-agent supply section are mixed within the mixing section prior to being supplied to said processing chamber as the process fluid or pumps the chemical formulation directly to said processing chamber.

Claim 2 (Currently Amended)

A high-pressure processing apparatus as claimed in Claim 1, wherein said plural chemical agents are stored in dedicated tanks, respectively, and

wherein said chemical-agent supply means section includes: blending means for blending the chemical agents; a plurality of flow-rate control means each provided in correspondence to a respective one of said dedicated tanks; and pumping means for pumping said chemical formulation blended by said blending means, and wherein said chemical-agent supply section adjusts blending proportions of the individual chemical agents in said chemical formulation by way of said plural flow-rate control means individually controlling the respective flow rates of said plural chemical agents supplied to said blending means.

Claim 3 (Original)

A high-pressure processing apparatus as claimed in Claim 2, wherein said plural flow-rate control means each perform a feedback control for controlling the flow rate of the chemical agent supplied to said blending means.

Claim 4 (Canceled)

Claim 5 (Original)

A high-pressure processing apparatus as claimed in Claim 2, wherein said blending means is a mixing valve assembly.

Claim 6 (Currently Amended)

A high-pressure processing apparatus as claimed in Claim 2, wherein at least one of said plural chemical agents is defined as a replenishing chemical agent to be replenished, wherein said tank stores said replenishing chemical agent, and wherein said apparatus further comprising comprises a replenishment means section for replenishing said tank with said replenishing chemical agent to be replenished, the tank storing therein said chemical agent to be replenished.

Claim 7 (Currently Amended)

A high-pressure processing apparatus for subjecting a surface of a process subject to a predetermined surface treatment by allowing a process fluid comprising a high-pressure fluid or a mixture of the high-pressure fluid and a chemical agent to contact the surface of said process subject, said apparatus comprising:

a plurality of pressure vessels each including a processing chamber defined therein for performing said surface treatment;

a plurality of mixing sections, each mixing section supplying a process fluid under pressure to one of said pressure vessels;

a high-pressure fluid supply unit means for supplying said high-pressure pumping a first fluid under pressure into to said plurality of mixing sections plural processing chambers;

a plurality of common tanks individually storing therein a respective one of plural

chemical agents; and

a plurality of chemical-agent supply units means which are each provided in correspondence to a respective one of said plural processing chambers, each chemical-agent supply unit corresponding to one of the mixing sections and which each prepares preparing a chemical formulation for the corresponding processing chamber mixing section by blending all or selected one(s) at least one of said plural chemical agents supplied from said plural common tanks and then, as required, pumps pumping the chemical formulation under pressure into the corresponding mixing section, wherein the high-pressure first fluid pumped from said high-pressure supply means unit and the chemical formulation pumped from each chemical-agent supply unit are mixed within the corresponding mixing section prior to being supplied to one of the processing chambers as the process fluid chamber or pumps the chemical formulation directly to the processing chamber.

Claim 8 (Currently Amended)

A high-pressure processing apparatus as claimed in Claim 7, wherein each of said plural chemical-agent supply units means each include: further comprises blending means for blending the chemical agents; a plurality of flow-rate control means each provided in correspondence to a respective one of said plural common tanks; and pumping means for pumping said chemical formulation blended by said blending means, and wherein each of said chemical-agent supply units adjusts each adjust blending proportions of the individual chemical agents in said chemical formulation by way of said plural flow-rate control means individually controlling the respective flow rates of said plural chemical agents supplied to said blending means.

Claim 9 (Original)

A high-pressure processing apparatus as claimed in Claim 8, wherein said plural flow-rate control means each perform a feedback control for controlling the flow rate of the chemical agent supplied to said blending means.

Claim 10 (Canceled)

Claim 11 (Original)

A high-pressure processing apparatus as claimed in Claim 8, wherein said blending means is a mixing valve assembly.

Claim 12 (Currently Amended)

A high-pressure processing apparatus as claimed in Claim 8, wherein at least one of said plural chemical agents is defined as a replenishing chemical agent ~~to be replenished, wherein said tank stores said replenishing chemical agent, and wherein~~ said apparatus further ~~comprising~~ comprises a replenishment means section for replenishing said tank with said replenishing chemical agent ~~to be replenished, the tank storing therein said chemical agent to be replenished.~~

Claims 13-14 (Canceled)

Claim 15 (New)

A high-pressure processing apparatus as claimed in Claim 1 further comprising a recovery unit connected to the pressure vessel and recovering said high-pressure fluid after the surface of the process subject has been subjected to the predetermined surface treatment.

Claim 16 (New)

A high-pressure processing apparatus as claimed in Claim 7 further comprising a recovery unit connected to the plurality of pressure vessels and recovering said high-pressure fluid after the surface of the process subject has been subjected to the predetermined surface treatment.

Claim 17 (New)

A high-pressure processing apparatus as claimed in Claim 1, wherein said chemical agent supply section includes a pump and a blending section for blending at least one of plural chemical agents to prepare the chemical formulation in an upstream side with respect to said pump,

said blending section blends under pressure which is lower than pressure in a downstream

side with respect to said pump, and
said pump pumps the chemical formulation.

Claim 18 (New)

A high-pressure processing apparatus as claimed in Claim 17, wherein said blending section blends under normal pressure.

Claim 19 (New)

A high-pressure processing apparatus as claimed in Claim 7, wherein each chemical-agent supply unit includes a pump and a blending section for blending at least one of plural chemical agents to prepare the chemical formulation in an upstream side with respect to said pump,

said blending section blends under pressure which is lower than pressure in a downstream side with respect to said pump, and
said pump pumps the chemical formulation.

Claim 20 (New)

A high-pressure processing apparatus as claimed in Claim 19, wherein said blending section blends under normal pressure.